

UCSI
SCHOOL OF ENGINEERING
MAY – AUGUST 2010

COURSE: EE 109, Physics for Scientists and Engineers I
Lecture: 3 hrs; Credit: 4

INSTRUCTOR: Prof. Hikmat/Mr. Fahri Heltha

OFFICE: School of Engineering
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OFFICE HOURS: MON – FRI ; 8 AM – 5 PM

GOALS: Provide the student with a fundamental understanding of general principles of mechanics, mechanical and thermal properties of matter.

PREREQUISITES: None.

TEXTBOOK: Principles of Physics, by Beuche & Jerde, McGraw-Hill, IE edition (ISBN#: 0-071-13854-4).

EXAMS: 3 term-tests (tests and mid-term) and a comprehensive final exam will be given. Make-up exams will only be given for properly documented illness, emergency, or other reason.

GRADING:

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|------------|------|
| Lab | 10% |
| Tests | 10% |
| Mid-Term | 20% |
| Final Exam | 60% |
| Total | 100% |

UCSI
EE 109 PHYSICS FOR SCIENTISTS AND ENGINEERS I – MAY 2010

TOPICS TO BE COVERED

Uniformly Accelerated Motion
Newton's Laws of Motion
Static Equilibrium
Work and Energy
Linear Momentum
Motion in a Circle
Rotational Work, Energy and Momentum
Mechanical Properties of Matter
Temperature and the Kinetic Theory of Gases
Thermal Properties of Matter
The First and Second Law of Thermodynamics
Vibration and Waves
Sound

LEARNING OUTCOMES

At the completion of this course the students should be able to:

- 1) Apply Newton's laws in the linear and rotational motion.
- 2) Calculate the mechanical energy of the system.
- 3) Determine the center of mass of the system.
- 4) Use the fluid mechanics principles and thermodynamic laws.
- 5) Find the wavelength, frequency and amplitude of the sound waves.